97TH CONGRESS } HOUSE OF REPRESENTATIVES { REPORT
2d Session } { No. 97-574

# AUTHORIZING APPROPRIATIONS TO THE OFFICE OF RESEARCH AND DEVELOPMENT, ENVIRONMENTAL PROTECTION AGENCY, FOR FISCAL YEARS 1983 AND 1984

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MAY 18, 1982.—Committed to the Committee of the Whole House on the State of the Union and ordered to be printed

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Mr. FUQUA, from the Committee on Science and Technology, submitted the following

# REPORT

together with

# MINORITY VIEWS

[To accompany H.R. 6323]

[Including cost estimate of the Congressional Budget Office]

The Committee on Science and Technology, to whom was referred the bill (H.R. 6323) to authorize appropriations for environmental research, development and demonstrations for the fiscal years 1983 and 1984, and for other purposes, having considered the same, report favorably thereon with an amendment and recommend that the bill as amended do pass.

CONTENTS

| | | Page |
|---|---|---|
| I. | Purpose of the bill | 3 |
| II. | Committee actions | 4 |
| III. | Background and need for the legislation | 4 |
| IV. | Explanation of the bill | 4 |
| V. | Committee views | 37 |
| VI. | Cost and budget data | 38 |
| VII. | Oversight findings and recommendations | 38 |
| VIII. | Congressional Budget Act information | 38 |
| IX. | Congressional Budget Office cost estimate | 38 |
| X. | Oversight findings and recommendations, Committee on Government Operations | 39 |
| XI. | Effect of legislation on inflation | 39 |
| XII. | Changes in existing law made by the bill, as reported | 40 |
| XIII. | Committee recommendations | 42 |
| XIV. | Minority views | 42 |

The amendment is as follows:

On page 19, strike out line 7 and all that follows down through line 9 on page 26 and substitute the following:

89-006 O

H703-9

RESEARCH PROGRAM CONCERNING INDOOR AIR QUALITY

SEC. 8. (a) The Congress finds, on the basis of reports prepared by the General Accounting Office and the National Academy of Sciences, that due to the absence of a statutory mandate for a single Federal agency to undertake and coordinate research, development, and demonstration efforts concerning indoor air pollution—

(1) Federal program in this field are fragmented and underfunded; and

(2) an adequate information base concerning potential indoor air quality problems is not being developed by the Federal Government.

(b) The Administrator shall carry out a research program under this section with respect to indoor air quality. Such program shall be designed to (1) gather data and information on all aspects of indoor air quality in order to contribute to the understanding of health problems associated with the existence of air pollutants in the indoor environment, and (2) coordinate Federal, State, local and private research, development, and demonstration efforts relating to the improvement of indoor air quality.

(c) The Administrator may establish such committees, comprised of individuals representing Federal agencies concerned with various aspects of indoor air quality, and such advisory groups, comprised of individuals representing the scientific community, industry, and public interest organizations, as may be necessary to assist the Administrator in carrying out the research program required by this section. The Administrator shall also consult and coordinate with State and local officials and other interested parties having concerns related to the program carried out under this section.

(d) The research program required under this section shall include, but not be limited to—

(1) research, development, and demonstration concerning the identification, characterization, and monitoring of indoor air pollution sources and levels (including research, development, and demonstration relating to (A) the measurement of various pollutant concentrations and their strengths and sources, (B) high-risk building types, and (C) instruments for indoor air quality data collection);

(2) research relating to the effects of indoor air pollution on human health;

(3) research, development, and demonstration relating to control technologies to prevent or abate indoor air pollution (including the development, evaluation, and testing of individual and generic control devices and systems); and

(4) the dissemination of information to assure the public availability of the findings of the Administrator pursuant to the research, development, and demonstration activities under this section.

(d) (1) Not later than one year after the date of the enactment of this Act, the Administrator shall submit to the Con-

gress a plan for the implementation of the research program required under this section.

(2) Not later than 36 months after such date of enactment, the Administrator shall submit a progress report, including an assessment of future research needs.

(3) Not later than 54 months after such date of enactment, the Administrator shall submit to the Congress a final report setting forth the results of the program, assessing the state of knowledge concerning the risks to human health associated with indoor air pollution, assessing the need for further research, and making such recommendations as may be appropriate.

(4) The progress report and the final report submitted under this subsection shall be submitted to the National Academy of Sciences within a reasonable period before the dates required for submittal to the Congress and, when submitted to Congress, such reports shall contain any coments provided by the National Academy of Sciences.

(e) Nothing in this section shall be construed to authorize the Administrator to carry out any regulatory program or any activity other than research, development, and demonstration and the related reporting, information dissemination, and coordination activities specified in this section. Nothing in this section shall be construed to limit the authority of the Administrator or of any other agency or instrumentality of the United States under any other authority of law.

(f) Of the funds appropriated pursuant to the authorization contained in section 2(a)(9) of this Act for each of the fiscal years 1983 and 1984, the sum of $4,000,000 is authorized to be appropriated to carry out this section.

## I. The Purpose of the Bill

The purposes of the bill are:

(1) To authorize appropriations for environmental research, development, and demonstration activities of the Environmental Protection Agency for fiscal years 1983 and 1984.

(2) To expand the EPA's capability and emphasis in long-term environmental research;

(3) To strengthen the EPA's environmental monitoring activities as needed for implementation of Federal environmental statutes and for development of a national environmetal monitoring system;

(4) to assign EPA the responsibility for conducting environmental research associated with energy development activities;

(5) To ensure the objectivity of the EPA Science Advisory Board;

(6) To authorize appropriations for a two-year study on the management and organization of Federal environmental research programs; and

(7) To establish a research program on indoor air quality.

## II. Committee Actions

The Subcommittee on Natural Resources, Agriculture Research and Environment held hearings on the FY 1983 EPA budget request for research and development on February 24 and March 2 and 19, 1982. In response to these hearings, a draft bill was prepared and presented to the Subcommittee for markup on May 5, 1982. In that meeting, the Subcommittee order reported, by a 7 to 3 recorded vote, a clean bill to the full committee. The bill, H.R. 6323, was introduced on May 6, 1982, by Mr. Scheuer with five cosponsors (Mr. Blanchard, Mr. Brown of California, Mrs. Schneider, Mr. Walgren, and Mr. White). H.R. 6323 was considered, amended, and ordered reported by the full Committee on Science and Technology on May 18, 1982, a quorum being present.

As ordered reported, H.R. 6323 authorizes appropriations totaling $296,785,000 for FY 1983 and $310,887,000 for FY 1984 for the research programs of the Environmental Protection Agency. The FY 1983 authorization is $80,900,000 above the President's FY 1983 request of $215,885,000 and $18,864,000 above the FY 1982 appropriation of $277,921,000 for these programs. (The corresponding FY 1982 authorization (H.R. 3115) was $321,695,000.) Of this increase, $17,000,000 is for salaries and expenses, $59,500,000 is for research contracts, grants, and cooperative agreements, and $4,400,000 is for Superfund research. The FY 1984 authorization represents a 5% increase over the FY 1983 authorization.

In addition to program authorizations, H.R. 6323 contains provisions on long-term environmental research, environmental monitoring, energy research, the EPA Science Advisory Board, management and organization of Federal environmental research programs, and indoor air quality.

## III. Background and Need for the Legislation

The Committee on Science and Technology has adopted the practice of annual authorization of the Environmental Protection Agency research program as a way of ensuring that the program is well managed and is supporting the Agency's primary role of protecting public health and welfare.

Last year's bill, H.R. 3115, continued the process of authorizing program funds and providing program direction. Unlike prior bills, this year's bill, H.R. 6323, authorizes program funds and provides program direction for two fiscal years. This expansion is intended to promote stability and continuity in the Agency's research program which, given the nature of research, should enhance program quality.

## IV. Explanation of the Bill

### Introduction

The paragraphs that follow provide a section-by-section description of the purpose and content of the bill. Table 1 provides a summary of all the appropriations that are authorized by this bill.

The first column in table 1 shows the funding level authorized in fiscal year 1982, while the second column shows the Agency's estimated spending for fiscal year 1982. Column three shows the fiscal year 1983 budget request submitted by the President to the Congress and column four indicates the difference between the fiscal year 1982 estimate

and the fiscal year 1983 request. The fifth column represents the Committee's fiscal year 1983 recommendation while column six shows the difference between the fiscal year 1983 authorization and the President's request. Column seven contains the fiscal year 1984 recommended authorization and column eight shows the difference between the fiscal year 1984 and fiscal year 1983 authorization. The last column identifies the corresponding section of the bill authorizing the appropriation for fiscal year 1983 and fiscal year 1984.

A section-by-section description along with a discussion of the Committee's actions and views follow:

SECTION 1

The bill shall be cited as the "Environmental Research, Development, and Demonstration Act of 1983".

SECTION 2

Section 2 of the bill provides for authorization of appropriations for the research program categories. Except where otherwise noted, these are the program categories used by the Environmental Protection Agency in developing their budget request.

The following paragraphs describe each of the research programs and the corresponding Committee action for fiscal years 1983 and 1984. The discussion of individual programs is organized by the media identified in Table 1. There is a brief overview for each of the medium, followed by discussion of Committee actions.

TABLE 1.—EPA OFFICE OF RESEARCH AND DEVELOPMENT: SUMMARY OF AUTHORIZED APPROPRIATIONS

[By fiscal years, in thousands of dollars]

| Medium: Program category | 1982 | | 1983 President's request | 1983 request versus 1982 estimate | 1983 committee recommendation | 1983 recommendation versus 1983 request | 1984[1] committee recommendation | 1984 recommendation versus 1983 recommendation | Bill section |
|---|---|---|---|---|---|---|---|---|---|
| | Authorized | Estmate | | | | | | | |
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| Air | 64,430 | 55,732 | 47,185 | −8,547 | 57,685 | +10,500 | 61,146 | +3,461 | 2(a)(1) |
| Water quality | 48,039 | 45,090 | 27,910 | −17,380 | 44,210 | +16,500 | 46,862 | +2,652 | 2(a)(2) |
| Drinking water | 29,713 | 28,353 | 22,906 | −5,448 | 26,406 | +3,500 | 27,990 | +1,584 | 2(a)(3) |
| Solid/hazardous waste | 31,046 | 29,488 | 29,579 | +91 | 31,579 | +2,000 | 33,474 | +1,895 | 2(a)(4) |
| Pesticides | 6,876 | 5,582 | 6,469 | +887 | 6,469 | 0 | 6,857 | +388 | 2(a)(5) |
| Radiation | 2,982 | 2,545 | 1,586 | −958 | 1,586 | 0 | 1,681 | +95 | 2(a)(6) |
| Interdisciplinary | 6,484 | 5,704 | 4,213 | −1,491 | 19,213 | +15,000 | 20,366 | +1,153 | 2(a)(7) |
| Toxic substances | 38,008 | 31,176 | 26,649 | −4,527 | 29,149 | +2,500 | 30,898 | +1,749 | 2(a)(8) |
| Energy: | | | | | | | | | |
| Control technology | 39,987 | 28,115 | 16,129 | −11,986 | 25,129 | +9,000 | 26,636 | +1,507 | 2(a)(9)(A) |
| Health effects | 5,807 | 1,366 | 2,389 | +1,023 | 6,889 | +4,500 | 7,302 | +413 | 2(a)(9)(B) |
| Ecological effects | 15,085 | 13,959 | 3,984 | −9,975 | 11,484 | +7,500 | 12,173 | +689 | 2(a)(9)(C) |
| Monitoring systems | 230 | 0 | 0 | 0 | 3,000 | +3,000 | 3,180 | +180 | 2(a)(9)(D) |
| Acid rain | 9,037 | 9,022 | 12,029 | +3,007 | 12,029 | 0 | 12,751 | +722 | 2(a)(9,(E) |
| Subtotal | 70,146 | 52,492 | 34,530 | −17,962 | 58,531 | +24,000 | 62,042 | +3,511 | 2(a)(9) |
| Management/ support | 8,512 | 7,883 | 8,712 | +840 | 11,212 | +2,500 | 11,825 | +613 | 2(b) |
| ORD subtotal | 306,236 | 264,044 | 209,549 | −54,495 | 286,010 | +76,500 | 303,141 | +17,111 | ---------- |
| Superfund | 15,460 | 13,877 | 6,336 | −7,541 | 10,736 | +4,400 | 7,735 | −3,000 | 2(a)(10) |
| Bill/ORD total | 321,695 | [2] 277,921 | 215,885 | −62,037 | 296,785 | +80,900 | 310,887 | +14,111 | ---------- |

[1] 6-percent increase over fiscal year 1983 authorization level for each program category, except Superfund.
[2] Does not include a $15,000,000 reduction in January 1982 as a result of internal reprograming.

*General program description*

The air research and development program supports implementation of the Clean Air Act and is designed to furnish EPA with the knowledge to establish prudent air quality standards and controls based upon known or potentially adverse health and ecological effects; to define, develop, and demonstrate systems for controlling stationary source pollution; and to evaluate strategies for minimizing the emission of air pollutants.

To achieve these ends, the program is structured to identify and, to the extent possible, quantify the adverse human health effects of exposure to air pollutants; to quantify the effects and fate of air pollutants on biological components and processes within the environment; to develop predictive models for pollutant emission, transport, transformation, and removal, and verify these models by actual measurements; and to develop new and improved technology for preventing and controlling air pollution and demonstrate the cost effectiveness of such technologies. The air research and development program also provides analytical measurement methods for monitoring air pollutants; provides procedures and materials to document the validity of monitoring data; and provides technical expertise, specialized facilities and equipment to the regulatory and enforcement programs.

This program is divided into four component programs to coincide with the major areas of attention in the Clean Air Act. These subprograms include the Oxidants program, the Hazardous Air Pollutants program, the Mobile Sources program, and the Gases and Particles program.

*Budget request*

The total fiscal year 1983 request for the Air Research Program was $47,185,000, a decrease of $8,547,000 from fiscal year 1982 spending of $55,732,000. This primarily reflects: (1) a 23 percent reduction in funding for health and ecological research on air pollutants which supports development of National Ambient Air Quality Standards (NAAQS) and Hazardous Air Pollutant Standards (HAPS); (2) reduced development and validation of air pollutant transport models needed to evaluate State Implementation Plans; (3) completion of some diesel health studies in 1982; and (4) a significant reduction in the National Crop Loss Assessment Program.

*Committee action*

The Committee recommends a total fiscal year 1983 authorization of $57,685,000 for this program, $10,500,000 above the request. Of this increase, $3,000,000 is for salaries and expenses, primarily in the areas of monitoring research and environmental process research, and $7,500,000 is for contracts, grants, and cooperative agreements.

Programmatically, the fiscal year 1983 increase is distributed among the following research activities:

*Monitoring.*—Plus $4,000,000 is for development and validation of monitoring methods for air pollutants and for quality assurance services to State, local, and EPA laboratories. The Committee notes that

the quality, consistency, and compatibility of environmental data on air pollution around the country is woefully deficient to the point of imparing the Nation's ability to make sound environmental policy decisions. This situation must be improved if more cost-effective control strategies for air pollution are to be developed and if pressing environmental debates, such as exists with transboundary air pollution and acid rain, are to be resolved. (See section 4 discussion on page 40 for further remarks on this subject.)

*Health Effects.*—Plus $3,500,000 is for risk assessment studies on hazardous air pollutants and for research for supporting development of National Ambient Air Quality Standards (NAAQS) for sulfur oxide/particulate matter and for nitrogen oxides. In 1976, EPA identified 600 air borne pollutants as possible candidates for listing and regulation as Hazardous Air Pollutants (HAPS). To date, EPA has listed seven pollutants as HAPS of which four are currently regulated. EPA is now investigating 37 air borne pollutants for listing as HAPS, many of which are regulated under other Federal statutes. One half of the additional funds provided here is to be used for HAPS research, accelerating EPA's evaluation of the 37 pollutants now under investigation. The remainder of the addition is for research supporting the sulfur oxide/particulate matter and the nitrogen oxide criteria documents which are used to establish NAAQS for these pollutants. The scientific basis for these standards appears to be the weakest among the criteria pollutants. Moreover, the Committee is concerned over the Agency's approach to managing the research in support of revising the criteria documents which must be done every five years. Because of the nature and realities of research, the Agency is unlikely to build significantly to the scientific basis underlying NAAQS if it starts its research effort two to three years prior to when the standard must be reevaluated. A consistent level of research effort promises to yield more new knowledge and, therefore, more justifiable standards. The Committee directs the Administrator to follow this approach.

*Environmental processes.*—Plus $3,000,000 is for atmospheric chemistry research on the formation of photochemical oxidants and for development and validation of models relating emissions to ambient concentrations of air pollutants, especially ozone, which are needed to evaluate State Implementation Plans (SIPS). The Committee notes that there is much uncertainty surrounding the formation of such pollutants as ozone and acid rain and the specific correlation of sources and ambient concentration of air pollutants. This situation has made it difficult to justify abatement and control strategies designed to achieve the air quality goals established under the Clean Air Act. Such evaluations have been based, in part, on the analytical results of models relating emissions to ambient air concentrations. Unfortunately, no good models exist to perform this analysis because the fundamental knowledge on the formation and transport of air pollutants is not sufficiently developed. The absence of good models for evaluating control options makes the achievement of air quality goals difficult and could lead to costly control measures whose benefit may be marginal and inefficient. The Committee believes that successful implementation of the Clean Air Act requires a better understanding of atmospheric chemistry and valid transport and transformation models. The addi-

tional funds provided by the Committee are intended to advance our knowledge in these areas.

For fiscal year 1984, the Committee recommends an authorization of $61,146,000, an increase of $3,461,000 (6 percent) from the fiscal year 1983 recommendation, with the same fiscal year 1983 program distribution and direction.

Lastly, the Committee wishes to express its views on the National Crop Loss Assessment Network (NCLAN). This is a nationally coordinated program, initiated by the Environmental Protection Agency, of field and laboratory studies to examine crop losses due to air pollution. NCLAN consists of a group of cooperating government and nongovernment organizations engaged in field work, crop modeling, and economic studies to assess the immediate and long-term economic consequences of the effects of air pollution on agricultural crop production.

The effects of air pollution on agricultural productivity have been estimated to be between $2 and $4 billion per year. However, much more needs to be done to understand the full effect of air pollution on our agricultural and national economy. The Committee has supported this important program in the past and continues to support its funding. The Administrator of the Agency has indicated her support for the program as well in an April 5, 1982 letter to a Member of this Committee. Having completed only three years of work on a program envisioned to take six years, and in consideration of the complexity and long-term nature of the problem being examined, the Committee considers it important to continue.

### SEC. 2(a)(2) WATER

*General program description*

The role of research and development in EPA's water quality program is to provide the scientific information needed to support its standard setting and enforcement activities as required under the Federal Water Pollution Control Act. To do this, a multifaceted research program has been established. The goals of this program include the development of efficient and cost effective wastewater treatment technology for both municipalities and industries; the determination of the health implications of existing technology for treatment and disposal of wastewater and sludge; the determination of useful and defensible monitoring methods; documentation of the validity of monitoring data; definition of criteria for water use in various aquatic environments; the establishment of strategies for control of pollution from spills of hazardous materials; and the prevention or control of pollution from agriculture and forestry sources. An overall goal is to provide the scientific basis for economical and socially viable environmental management.

This program consists of three component programs—the Water Quality Program, the Muncipal Wastewater Program, and the Industrial Wastewater Program.

The Water/Water Quality program provides the scientific information, techniques and technical assistance to select the most appropriate water quality goals; assess current and future water quality

problems; and identify cost-effective water quality management strategies. Specifically, this program:

Provides reports and information used to establish the relationship between assumed exposure to pollutants and potential adverse toxicity to human health and aquatic life;

Develops monitoring technology capable of quantifying those environmental measurements for importance to the Agency;

Provides health effects data for use in developing water quality criteria and in defining sound watershed management approaches;

Develops: (1) water qualify criteria for the protection of aquatic life; (2) exposure analysis predictive techniques for conducing toxic materials balances necessary to identity major sources, pathways and fates of toxic pollutants and to devise cost-effective nationwide, regional, or local control strategies; (3) watersheds analysis techniques for identifying water quality problems and selecting cost-effective point and nonpoint source control strategies; (4) techniques for assessing water quality problems in lakes and selecting cost-effective restoration measures; (5) techniques for assessing the impacts of dredge and fill operations on wetlands and other aquatic environments; and (6) techniques for assessing the impacts of ocean discharge and dumping activities on the marine environment; and

Provides, through a field assessment program, the scientific information needed to effectively manage water quality in the Great Lakes and Chesapeake Bay.

The Water/Municipal Wastewater program has two distinct facets: Municipal Wastewater Engineering and Technology and Hazardous Materials Spills. This program furnishes the engineering and technology support for the Agency Construction Grants Program, the Sec. 208 Areawide Waste Treatment Management Program, the National Urban Runoff Program, the Clean Lakes Program, the Effluent Guidelines Program, the NPDES program and the Solid Waste Program (sludge management regulations). These programs are major activities within the Office of Water Enforcement and the Office of Solid Waste.

The Water/Industrial Wastewater program concentrates on point sources of water pollution resulting from those mining, manufacturing, service, and trade industries which must meet best available technology (BAT) standards of the Federal Water Pollution Control Act (FWPCA). This program is the realization of a national policy established in the 1972 Amendments which called for a major research and demonstration effort to develop the technology necessary to help eliminate the discharge of pollutants into the Nation's waters. The program thus develops new or improved technology having industry-wide application short term achievability, and long term viability. Research results also prove a significant data base for the establishment of economically and technically feasible affluent guidelines and treatment parameters for industrial liquid waste discharge permits. As a result of the Natural Resource Defense Council Consent Decree in June 1976, program emphasis has been shifted toward the development of the data required to regulate the discharge of toxic pollutants. The

program direction focuses on developing complete waste stream assessments, including chemical and bioassay data, and on developing and demonstrating treatment technology and alternatives for toxic and non-toxic pollutant-materials in industrial waste effluents. High priority is also put on the development and demonstration of reuse and recycle options for industrial wastewater discharges.

*Budget request*

The total request for the fiscal year 1983 Water Quality Research Program was $27,710,000. This is a decrease of $17,380,000 (40 percent) from fiscal year 1982 appropriations of $45,090,000. This net decrease reflects: (1) termination of the Great Lakes Research Program; (2) termination of the Aquatic Weeds Research Program; (3) reduced investment in long-term research projects that have no immediate impact on current planning and regulatory needs; (4) termination of research in support of section 208 of the Clean Water Act, the Areawide Waste Treatment Management Program; (5) termination of research on non-point sources of pollution such as nine drainage, agriculture and urban runoff, and runoffs from eroded lands; and (6) phase-out of research supporting development of industrial and municipal effluent guidelines.

*Committee action*

The Committee recommends an increase in fiscal year 1983 of $16,500,000 for this program, making the total fiscal year 1983 authorization equal to $44,210,000. Of this increase $3,000,000 is for salaries and expenses and $13,500,000 is for extramural research which the Administration proposed to virtually eliminate in fiscal year 1983.

The Committee directs that the increase provided be programmatically distributed as follows:

*Water quality.*—$+12,500,000 for the following research programs and activities—

For the Great Lakes Research Program, $2,500,000 is provided to restore this program to the fiscal year 1982 level of effort. The Committee directs that this program be implemented through the EPA's Large Lakes Research Station at Grosse Isle, Michigan. This restoration is intended to allow the United States to meet its obligations with Canada as set forth in the Water Quality Agreement of 1978 by continuing efforts in assessing and measuring the sources, transport, fate, and effects of pollutants in the Great Lakes. Also continued should be efforts aimed at developing and implementing a management strategy for the control of toxic substances in the Great Lakes. The Committee views the Great Lakes as a valuable national resource and places high priority on research necessary to ensure its preservation.

For the Aquatic Weeds Research Program, $750,000 is provided to partially restore this program to its fiscal year 1982 level. The Committee has for several years urged the Agency to conduct this program, yet no funds were requested for this program by the Agency in fiscal year 1983. The Committee notes that last year's authorization of $1,000,000 was not intended to provide a 1-year add-on; rather, the Committee intended that a research program be initiated and sustained with the goal of providing environmentally sound ways for controlling aquatic weeds. Since such solutions are not yet available,

the Committee directs the Agency to proceed immediately to undertake a continuing program in aquatic weed control research.

An additional $2,000,000 is authorized for development and validation of water quality monitoring methods. The Committee notes the urgent need to improve monitoring in all media (i.e., air, water, . . . etc.) as a necessary requirement for sound policy decision making. (See discussion related to section 4 of the bill.) This increase is intended to enhance the water quality data used for regulatory purposes.

Finally, $5,750,000 is for research that would be necessary for establishing site-specific water quality standards, including, but not limited to, hazard assessments of toxic pollutants. transport and fate models for toxic substances, and non-point source pollution research. A water quality standards approach for dealing with water pollution is being considered by the Administration. The present Clean Water Act calls for a technology base approach to resolving water pollution problems. This approach has been difficult to implement with, to date, effluent guidelines issued for only one of sixty-five identified toxic pollutants. Even though the Agency states that its research in support of effluent guidelines is completed, EPA is seeking, through the courts, an extension of the date by which these guidelines must be issued. This leads the Committee to believe that effluent guideline research is not completed. Thus, the Committee directs that such research continue in conjunction with research to evaluate the feasibility of a standards approach for dealing with water pollution problems.

*Municipal wastewater.*—Plus $1,500,000 is for additional research efforts to improve the reliability, efficiency, and cost-effectiveness of wastewater treatment plants. A substantial reduction in this program was proposed by the Agency. The Committee seriously questions the wisdom of such an action in light of the magnitude of dollars associated with the Construction Grants Program and the design, operation, and maintenance problems that have been experienced with sewage treatment plants. The Committee believes that this increase would be a highly cost-effective expenditure of research funds.

*Industrial wastewater.*—Plus $2,500,000 is for research activities supporting the development and compliance with industrial effluent guidelines for priority toxic pollutants. The reason for this increase is provided in the discussion found above under the Water Quality program.

For fiscal year 1984, the Committee recommends an authorization of $46,862,000, an increase of $2,652,000 (6 percent) from the fiscal year 1983 recommendation, with the same program distribution and direction as in fiscal year 1963.

### SEC. 2(a)(3) DRINKING WATER

*General program description*

The Drinking Water program supports implementation of Public Law 93–523, the Safe Drinking Water Act of 1974. Research and evaluations are conducted relating to: (1) causes, diagnosis, and prevention of diseases and other impairments in man resulting directly

or indirectly from contaminants found in drinking water; (2) the treatment and control of those contaminants; and (3) the provision of dependable, economical, and safe supplies of water, including the protection of underground sources of drinking water. Research is also conducted to develop and implement quality assurance procedures and protocols for water supply laboratories to assure that laboratory analytical data are accurate and valid.

More specifically, this program (1) identifiies substances that occur in drinking water supplies at a sufficient number of locations to warrant regulations; (2) defines drinking water contamination effects on human health; (3) establishes analytical procedures to monitor contaminants; and (4) describes changes in treatment processes or new treatment technologies to minimize contaminant formation or reduce concentration levels. The contaminants addressed here fall into four categories; organic, inorganic (including asbestos), microbiological, and those affecting groundwater.

*Budget request*

The Agency requested a total of $22,906,000 for fiscal year 1983, a decrease of $5,448,000 from fiscal year 1982 spending of $28,353,000. This reduction reflects: (1) a $1,900,000 decrease in health research, with the elimination of epidemiology research, which supports development of Safe Drinking Water Act (SDWA) standards; and (2) a $3,800,000 cut in technology development and evaluation of drinking water systems. Groundwater research is maintained at the fiscal year 1982 funding level, $5,400,000.

*Committee action*

The Committee recommends a fiscal year 1983 of $26,406,000 for this program, an increase of $3,500,000 from the President's request. Of this increase, $1,000,000 is for salaries and expenses and $2,500,000 is for research grants, contracts, and cooperative agreements.

The increase provided is to be distributed among the following research activities:

*Health Effects.*—Plus $1,500,000 is for health research, including epidemiology research, on organic, inorganic, and microbiological contaminants in support of developing and revising drinking water standards. The Committee continues to be concerned about the validity of drinking water standards promulgated by the Agency, both for regulations issued in prior years, and for newly-proposed regulations. In some instances there appears to be far from sufficient scientific basis or data from which to establish standards, yet standards and regulations with far-reaching impacts and high costs for satisfying their requirements continue to be promulgated.

*Control technology.*—Plus $2,000,000 is for evaluation and development of treatment technologies, primarily for small systems, that will allow cost-effective attainment of drinking water standards. The Committee notes that the majority of communities found in violation of drinking water standards are small communities. To help alleviate this situation, the Committee believes the Agency should concentrate more resources on the development of small-flow systems. The additional funds provided here are exclusively for this purpose.

Finally, the Committee is deeply concerned about the deterioration of our Nation's groundwater supplies and applauds the Administration's proposed funding for the Groundwater Research Program ($5,400,000). In implementing this program, the Committee directs the Administrator to use, to the maximum extent possible, the facilities of the Robert S. Kerr Laboratory in Ada, Oklahoma. Moreover, the Groundwater Research Program should focus on activities associated with personnel training, information and technology transfer, technical assistance, identification of groundwater pollution sources, pollution detection and measurement methods, pollution transport and fate, characterization of subsurface structures, and finally, aquifer rehabilitation.

For fiscal year 1984, the Committee recommends a total authorization of $27,990,000, an increase of $1,584,000 over fiscal year 1983, with the same fiscal year 1983 program distribution and direction.

### SEC. 2(a)(4) SOLID/HAZARDOUS WASTE

*General program description*

Consistent with the goals of the Resource Conservation and Recovery Act of 1976 (RCRA), the objective of the hazardous waste research and development program is to develop the technologies, methodologies and scientific data bases necessary to achieve environmentally acceptable, cost-effective solid and hazardous waste management from generation through disposal.

The research program provides the scientific basis which will allow the private and public sectors to (1) reduce the quantities of waste, especially hazardous waste, requiring disposal through process change, waste recycle and reuse or waste treatment, (2) ensure environmentally sound disposal and destruction of future wastes and (3) correct past mismanagement practices. The major objective is to support the regulatory and enforcement efforts in (a) the identification and listing of hazardous wastes, hazardous waste streams from industry and "polluting" hazardous waste disposal sites; (b) development and revision of regulations for disposal of wastes by land disposal, thermal destruction or chemical, biological or physical treatment; (c) providing assistance in the evaluation of permit applications; (d) development and evaluation of remedial action engineering for uncontrolled polluting waste disposal sites; and (e) the assessment of risk from hazardous waste production and mismanagement.

*Budget request*

The Agency requests a total of $29,579,200 for 1983, an increase of $90,900 from 1982. Included in this total is $11,862,000 for Salaries and Expenses and $17,717,200 for Research and Development, with an increase of $3,920,000 and a decrease of $3,829,100, respectively. The increase in resources reflects a shift in emphasis towards more in-house research efforts; the decrease reflects the completion of several oil spills projects and the completion of the fuel extraction program which has reached the engineering stage where our research findings can be adapted by industry.

*Committee action*

The Committee recommended an increase of $2,000,000 in fiscal year 1983 for this program, making the total fiscal year 1983 authorization equal to $31,579,000. Of this increase, $500,000 is for salaries and expenses, primarily associated with monitoring research, and $1,500,000 is for extramural research. The programmatic distribution of this increase is as follows:

*Monitoring.*—Plus $1,000,000 is for development and validation of monitoring methods for hazardous wastes and for quality assurance services to State, local and EPA laboratories. (See section 4 discussion on page 40 for related remarks on this subject.)

*Environmental processes.*—Plus $1,000,000 is for development and validation of methods to predict expected pollution concentrations and costs associated with various disposal options for hazardous wastes.

For fiscal year 1984, the Committee recommends $27,990,000 for this program, an increase of $1,895,000 (6 percent) over fiscal year 1983, with the same program distribution and direction as in fiscal year 1983.

SEC. 2(a)(5) PESTICIDES

*General program description*

The pesticides research program is designed to support EPA requirements specified by the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) as amended, and the amendments to the Federal Food, Drug, and Cosmetic Act (FFDCA).

The research study areas for the support of these statutes include: (1) protect public health and the environment—to identify populations-at-risk, assess population exposures, and determine adverse effects to health and ecology; (2) minimize introduction of pesticides into the environment—to develop data to support strategies that will decrease future pesticide dispersion. In addition, this program provides quality assurance support for Agency measurements involving pesticides as well as providing resources for developing, validating, and documenting cost-effective alternate integrated pest control strategies for urban environments.

The 1982 budget request for this program is $6,876,000 and 93 positions. This reflects a decrease of $3,982,000 from 1981 which is primarily a broadly based reduction in environmental processes research and in agriculture Integrated Pest Management research which, henceforth, will be funded solely by the U.S. Department of Agriculture.

*Budget request*

The Agency requested a total of $6,468,800 for 1983, an increase of $887,400 from 1982. Included in this total is $4,360,600 for Salaries and Expenses and $2,108,200 for Research and Development, with a decrease of $941,500 and an increase of $1,828,900, respectively. The decrease reflects a reduction of in-hou efforts in conducting pesticide exposure assessments and publishing pesticides research summaries. The increase will provide additional research on human exposure to pesticides and on pesticide health effects.

*Committee action*

The Committee endorses the President's fiscal year 1983 request for this program, with an increase of $388,000 for fiscal year 1984 with the same program distribution and direction as in fiscal year 1983.

SEC. 2(a)(6) RADIATION

*General program description*

The establishment of protective guidelines for permissible levels of radiation in the environment is an EPA responsibility. Reorganization Plan No. 3 of 1970 transferred all functions of the Federal Radiation Council to EPA. The reorganization also transferred to the Administrator the authority, under provisions of the Public Health Service Act, as amended in 1980, to conduct research as necessary to provide scientific data needed for the formulation of standards. EPA is conducting research on the potential health effects associated with these frequencies of nonionizing radiation most commonly found in the general environment.

EPA is conducting a health effects research program which now accounts for approximately 25 percent of Federal research on nonionizing radiation and is the largest intramural effort in this field in the United States. Present research focuses on radiofrequency and microwave radiation in the range of 300 to 300,000 megahertz. Such frequencies are most prevalent in the environment and are emitted from a variety of sources such as radar systems, microwave ovens, radios, televisions, and other communication devices.

The health effects program is designed to provide EPA and other concerned agencies with an understanding of the biological consequences of exposure to non-ionizing radiation. This is accomplished with several research approaches. Biological effects studies in animals are increasingly focused on chronic exposures to low-level radiation, that is conditions analogous to the exposure circumstances for humans in the general environment. The primary research objectives are to determine if reproducible biological effects exist then to establish dose-response models. Critical points to be evaluated include behavioral immunologic, hemotologic, physiologic, reproductive, genetic, and teratologic factors. As a necessary tool for effects research, efforts are also directed toward improving dosimetric methods and exposure systems.

In addition, EPA has a monitoring and technical support program that was established in 1980 to document and improve the precision, accuracy and intercomparability of radiation measurements; to provide calibration facilities, expertise, equipment, guidelines, training, and performance evaluations needed by the program offices and states; and to supply quality control samples and reference materials containing radionuclides.

*Budget request*

The Agency requested a total of $1,586,400 for 1983, a decrease of $958,800 from 1982. Included in this total is $1,348,800 for Salaries and Expenses and $237,600 for Research and Development, a decrease of $503,500, and $455,300, respectively. This decrease results from a

phasedown of health effects research due to the completion of some studies in 1982.

*Committee action*

The Committee endorses the President's fiscal year 1983 request for this program, with an increase of $95,000 for fiscal year 1984 with the same program direction and distribution as in fiscal year 1983.

SEC. 2(a)(7) INTERDISCIPLINARY

*General program description*

Although many problems are best approached directly by specific media programs, effective management of environmental problems also requires cutting across the usual media lines when the problem, skill or technique involved is not readily assignable to a specific medium. This interdisciplinary approach is consistent with the original concept behind the establishment of the Agency: an integrated organization to regulate pollution in all media and to assure that control measures applied to one media do not result in adverse impacts on other media. EPA applies this intermedia concept to those parts of the abatement and control and the research and development programs where the problems, tools, and results are multidisciplinary in nature.

The interdisciplinary research and development program includes three major components which address multidisciplinary and multimedia research.

The Exploratory Research program serves to integrate on an intermedia basis the longer term research needs of the Agency's as expressed by each research planning committee. The objectives of the program are to: (1) identify, define and assess long-term environmental trends, problems and opportunities; (2) support mission-oriented basic research to stimulate innovative and long-range ideas and to infuse such concepts into Agency planning; and (3) insure the scientific merit of such research through rigorous peer review. The primary goal of this program is to promote efforts to minimize future environmental problems in a manner compatible with other national long-term economic and social goals.

The Strategic Assessment and Special Studies program aims to provide long-range strategic guidance to the Agency's R&D planning process. The program produces an annual Environmental Outlook report, analyzing long-range trends and in-depth assessments of significant emerging environmental problems. Objectives are achieved by developing and maintaining forecasting techniques and supporting a variety of environmental problem identification assessments. The Agency's major effort to develop and improve economic benefit estimates of environmental control is also maintained here.

The Exploratory Research Grants and Centers program identifies and supports long-range, mission-oriented research through the Competitive Grants programs, which subjects research proposals to a rigorous peer review and ranks them by scientific merit. The Exploratory Research Centers of Excellence are academic institutions which conduct research in specific critical areas related to the Agency's mission

and are intended to secure a core of the best available researchers to investigate current and emerging environmental problems. A high priority of the Centers program is to establish working relationships with industry.

*Budget request*

The Agency requested a total of $4,212,700 for 1983, a decrease of $1,490.900 from 1982. Included in this total is $1,622,000 for Salaries and Expenses and $2,590,700 for Research and Development, with decreases of $371,500 in Salaries and Expenses and $1,119,400 in Research and Development. The decrease reflects a reduction in the National Environmental Workforce activities and the termination of the environmental indicators activities.

*Committee action*

The Committee recommends an increase of $15,000,000 for this program, bringing the total fiscal year 1983 authorization up to $19,213,000. Of this increase, $14,000,000 is exclusively for cooperative agreements with and grants and block grants to universities and similar institutions conducting research and training to support continuing programs of long-term environmental research in the environmental sciences. The remainder of the increase, $1,000,000 is for salaries and expenses in support of the conduct and administration of the Agency's long-term research programs.

In past years, the Committee has directed the Agency to spend 15 percent of its appropriation for the Office of Research and Development on long-term environmental research. The Agency has responded to this directive by establishing three distinct programs focusing on such long term research—the Grants Program, the Centers of Excellence Program, and the Exploratory Core Research Program. The Grants and Centers programs have been funded by contributions from funds provided for the other program categories listed in this bill. The Exploratory Core Research Program has been funded exclusively with monies provided for this program category (Interdisciplinary). The requested fiscal year 1983 funding for these programs was $10,181,000, $3,360,000, and $4,213,000 respectively. The total of these requests equals $17,754,000 which is 8.2 percent of the entire $215,885,000 requested for the EPA Office of Research and Development.

The Committee is extremely disappointed with the Agency's request for long-term research activities, believing it to be totally inadequate. Throughout the EPA budget request, reductions are made in long-term research citing the Agency's intent to concentrate on research that supports the more immediate needs of the Agency. In following this approach, EPA fails to recognize that, in many cases, immediate needs cannot be satisfied without first undertaking research of a long-term nature that builds fundamental knowledge necessary for fulfilling those immediate needs. The Committee, along with the National Academy of Sciences and the Office of Technology Assessment, has expressed this view in the past and continues to do so. In keeping with this view, and in response to the Agency's inadequate attention to long-term research, the Committee directs the Administrator to obligate and expend 20 percent of its appropriation for the Office of Research and Development on long-term research. (See section 3 of

the bill and the accompanying discussion on page 39 of this report.)

The total authorized for fiscal year 1983 under this bill for long-term research is $57,112,000. This authorization is distributed as follows: $14,690,000 for peer-reviewed research performed in-house, $29,281,000 for grants for peer-reviewed research $7,928,000 for cooperative agreements with or block grants to universities and similar institutions, and $5,213,000 for the Exploratory Core Research Program. The additional $15,000,000 provided under this section shall be used exclusively for grants, block grants, and cooperative agreements supporting long-term research.

With these programs, the Committee intends for the Agency to develop a continuous source of highly trained and dedicated professionals, with expertise needed to upgrade all the research programs of the Agency. Institutions which are assisted should be involved in the kinds of long-term research that are essential to support the activities of the Agency research program. Awards should be for approximately three years duration and shall be made after critical peer review. Moreover, such research projects shall be continuous and stable.

Finally, the Agency is hereby made aware of the Committee's intention that these programs be of the highest quality, that the whole program including program review be open, and that the Committee intends to follow this matter.

For fiscal year 1984, the Committee recommends an authorization of $20,366,000, an increase of $1,153,000 over the fiscal year 1983 authorization. Of this authorization, $15,153,000 is for grants, block grants, and cooperative agreements supporting long-term research and shall supplement the fiscal year 1984 authorization made under section 3 of this bill.

### SEC. 2(a)(8) TOXIC SUBSTANCES

*General program description*

The research program conducted in Toxic Substances supports the needs of the Toxic Substances Control Act (Public Law 94–469). From modest beginnings in fiscal year 1977, the programs have grown rapidly, predominantly in the Health and Ecological Effects Program. During fiscal year 1977 and fiscal year 1978 the research programs were mainly providing technical service activities to the Office of Toxic Substances.

The program has now expanded to address a variety of regulatory research needs. These needs require sufficient knowledge to: (1) develop first generation testing rules and regulations pertaining to screening techniques for health and ecological effects; (2) provide analyses for transport and fate of ambient pollutants; (3) determine the ambient presence of selected toxic substances; (4) recommend alternative manufacturing options for the processing and/or production of potentially hazardous or toxic materials; (5) provide a broad spectrum of technical expertise and specialized equipment to agency operating programs.

The 1983 research and development program will focus on developing improved rapid, reliable, and cost-effective techniques to be used for predicting transport, transformation, exposure concentra-

tion and adverse deleterious effects on human health and the environment resulting from exposure to toxic substances. Research will be done on predicting, measuring, and determining the significance of exposure to commercial chemicals, with the ultimate goal of preventing or reducing adverse human health effects.

Research will also be conducted to develop measurement methods for identification and quantification of trace levels toxic substances in the environment. In addition, program emphasis will be on methods for measuring toxic chemicals in sediments, marine plants and in the air. These methods are needed in measuring exposure concentration, monitoring chemicals, designing control techniques and in enforcing regulations. In fiscal year 1983 and beyond, the program will provide field assistance to obtain data to validate testing protocols that have been issued and to assist in enforcement actions. Finally, the program includes an identified effort to investigate the effects of stratospheric ozone depletion on health and the biosphere.

*Budget request*

The Agency requests a total of $26,648,800 for 1983, a decrease of $4,527,100 from 1982. Included in this total is $14,500,100 for Salaries and Expenses and $12,148,700 for Research and Development. This represents an increase of $263,300 in Salaries and Expenses and a decrease of $4,790,400 in Research and Development. The increase reflects the Agency's desire to improve the in-house scientific quality of EPA laboratories and Agencywide risk assessments of toxic and hazardous chemicals. The decrease reflects the completion of much of the research needed to implement test guidelines under Section 4 of the Toxic Substances Control Act and the reduction of funding to the National Center for Toxicological Research for long-term research which does not directly support the implementation of the Toxic Substances Control Act.

*Committee action*

The Committee recommended a fiscal year 1983 authorization of $29,149,000, an increase of $2,500,000 from the request. Of this increase, $500,000 is for salaries and expenses, primarily for health research activities, and $2,000,000 is for extramural research. Programmatically, these additional funds are to be distributed as follows:

*Health effects.*—$1,500,000 is for epidemiology health studies on toxic pollutants and for development and validation of methods for making hazard assessments of toxic pollutants. These activities were virtually eliminated in the fiscal year 1983 program. The Committee believes that these activities are essential for identifying harmful toxic pollutants and for developing appropriate regulatory positions for such pollutants. Funds are therefore provided to sustain a small research effort in these areas.

*National Center for Toxicological Research.*—In fiscal year 1982, EPA contributed $4,500,000 to the Center which performs long-term toxicological research. The fiscal year 1983 request is less than $1,000,000 for the Center. The Agency proposed this reduction saying that the long-term nature of the research performed at the Center was of little immediate use to the Agency. The Committee views the Agency's

reasoning as narrowsighted and, therefore, recommends a $1,000,000 restoration bringing the Agency's contribution to the Center to almost half that of fiscal year 1983.

For fiscal year 1984, the Committee recommends a $1,749,000 (6 percent) increase over fiscal year 1983, making the total fiscal year 1984 authorization equal to $30,898,000. The funding distribution and program direction are the same as in fiscal year 1983.

### SEC. 2(a)(9) ENERGY

*General program description*

EPA has the statutory responsibility to protect the environment in the course of the national program to develop and use the Nation's domestic energy resources to lessen our reliance on imported energy sources. Research and development programs in support of that requirement are mandated by the Clean Air Act, the Federal Water Pollution Control Act, and the Resource Conservation Act. Energy development and utilization cut across virtually every aspect of industrial, utility, commercial, and residential activity and thus require an exceptionally strong technical and policy basis for effective and equitable regulatory actions. This energy-related environmental policy will be implemented by all agencies of the Federal government.

EPA also has the responsibility to review and coordinate the research activities of other Federal agencies with respect to the environment as they pursue their individual missions contributing to progress toward the national energy goals. EPA's part in this cooperative effort is to: (1) conduct environmental assessments; (2) develop an adequate scientific basis for new environmental regulations; (3) provide guidance on control technology requirements to Federal and industry groups where developing new technologies; (4) assist in the development of control technologies especially the Office of Research and Development which has special expertise; and (5) assess the adequacy of existing control technologies.

The Energy research and development program is designed to determine the environmental implications and effects of the Nation's energy development efforts. This energy/environment comprehensive plan to classify program content and resources has been developed to assure that the entire range of Federal energy/environment research and development is woven together into a manageable frame work. This plan identifies research by the types of energy resources, the processes in obtaining and using the energy, and the scientific disciplines of pollution options for conventional energy systems and the assessment of the environmental problems or advantages of new energy technologies being developed by the Department of Energy. The program is divided into broad segments: control technology; health effects; ecological effects; monitoring systems; and acid rain.

*Budget request*

The total fiscal year 1983 request for the Energy Program was $34,530,000, a reduction of $17,962,000 (34 percent) from $52,492,000 in fiscal year 1982 and $72,048,000 (68 percent) from $106,578,000 in fiscal year 1981. This decrease reflects the Administration's decision to transfer responsibility for environmental research related to energy development activities to the private sector.

*Committee action*

The Committee increased the total fiscal year 1983 funding for this program by $24,000,000 over the President's request, making the fiscal year 1983 authorization equal to $58,531,000. Of this increase, $5,000,000 is for salaries and expenses and $19,000,000 is for extramural research. For fiscal year 1984, the Committee provided a $3,511,000 increase over fiscal year 1983 for a total fiscal year 1984 authorization of $62,042,000. The programmatic distribution of this increase is described in the following subsections of this section.

SEC. 2(a)(9)(A) ENERGY/CONTROL TECHNOLOGY

*Program description*

The following subprograms are included within the control technology program:

*Fuel processing, preparation and advanced combustion.*—This program participates in the development of advanced technologies for fossil fuel processing by providing environmental assessments, bench-scale research, technology assessments and guidance in process control technology. This program works in close cooperation with the Department of Energy process development and environmental programs to identify and quantify all residuals from fluidized bed combustors, synthetic fuels from coal processes, oil shale development, and coal cleaning. Comprehensive environmental assessments will be performed for these technologies to identify potential environmental problems and corresponding means for control.

*Fuel extraction.*—The energy resource extraction program deals with environmental quality problems associated with the technologies and processes for obtaining fuels; oil or natural gas extraction; oil shale development; and coal mining. The major purposes of the research program are: (1) to assess the existing and potential adverse environmental impacts from active and planned oil and gas production, including storage and transportation; (2) to develop methods, technology, and equipment to prevent, control, and abate environmental pollutants from these operations including spill cleanup; and (3) to document the technology/operational feasibility and the cost effectiveness of environmental control options.

*Environmental assessment of conventional and advanced energy systems.*—Research in this program is designed to assess environmental risks, conduct bench-style systems and/or control technology research and identify environmentally, socially, and economically acceptable alternatives for modified conventional energy systems, advanced energy supply concepts, and energy conserving techniques. The programs, which will assist EPA in selecting policies and in setting environmental standards, conducts comprehensive environmental assessments of energy systems. These integrated technology assessments quantify the cost/risk/benefit tradeoffs of energy systems and pollution control alternatives. A comprehensive assessment of unregulated or regulated residuals from conventional combustion sources is one major project of this program. Other environmental assessments included in this program will examine: industrial energy conservation, wastes as fuels, solar energy, energy-related solid

and waterborne residuals, geothermal energy, waste heat recovery, and advanced energy cycles.

*Flue gas sulfur oxide control.*—This program develops and evaluates alternative technologies for the removal of sulfur oxide emissions from flue gas at electricity generating plants and industrial boilers. The aim of the program is to develop technical data on which EPA can establish emission standards for sulfur-emitting sources. Efforts are underway to evaluate existing sulfur oxides removal installations, to assess impacts of flue gas desulfurization (FGD) technology, and to assess the applicability of FGD technology to industrial boilers and other sulfur oxide sources.

*Nitrogen oxide ($NO_x3$) control.*—The purpose of this program is to develop the best practicable technology for the control of $NO_x$ emissions from the leading categories of stationary sources and diesel engines. Stationary source categories include utility boilers, commercial/industrial boilers, residential heating systems, stationary engines, and advanced combustion processes. Advanced combustion processes such as advanced coal burner systems are being studied and fundamental engineering and analytical support studies are also being conducted to evaluate the potential of these advanced methods for $NO_x$ emission control and energy conservation. The research on controlled combustion also includes fuel conditioning for sulfur oxide removal.

*Flue gas particulate control.*—This program identifies and develops effective practicable technology to control aerosol emissions. Major research efforts in the program are: assessment and improvement of conventional systems (electrostatic precipitators, scrubbers, or fabric filters) for abating aerosol emissions; exploration of new and improved methods of control; and bench-scale investigation of specific control methods, for major problem sources (low sulfur coal combustion, new fuels, power productions, and selected industrial processes).

*Budget request*

The Agency requested $16,129,000 for the fiscal year 1983 Energy Control Technology Program, a reduction of $11,986,000 (43 percent) from fiscal year 1982. This action follows a reduction of $11,872,000 in this program during the course of fiscal year 1982. These cuts reflect the Agency's policy to rely on industry for the development and demonstration of energy control technologies.

*Committee action*

The Committee recommends a restoration of $9,000,000 for this program, making a fiscal year 1983 authorization of $25,129,000. The Committee does not believe that sufficient incentives exist for the private sector to invest adequate resources in developing and demonstrating energy pollution control technologies. High interest rates and the present climate of regulatory uncertainty diminish the justification for private sector investment in such activities. The Committee, therefore, provided additional funding for this program to allow the Agency to conduct and stimulate development of energy pollution control technologies. In so doing, the Agency should act as a catalyst for such development by concentrating the funding provided

for this program on bench scale work and "proof-of-concept" demonstration activities. (See section 4 discussion for related remarks.)

For fiscal year 1984, the Committee recommends an increase of $1,507,000 (6 percent) over fiscal year 1983 funding, with the same program distribution and direction as in fiscal year 1983.

SEC. 2(a)(9)(B) ENERGY/HEALTH EFFECTS

*Program description*

The objective of the Energy/Health Effects subprogram is to provide scientific data on the health effects of air and water pollutants originating from energy-related sources, including both conventional combustion and synthetic fuel facilities. ORD's energy health effects research, which is divided into three categories (epidemiological studies, clinical studies, and animal toxicology studies) is designed to correlate data derived from animal tests to effects on humans for development of regulations.

The Agency also provides a coordinated effort in the energy-related health effects research undertaken by the Department of Energy, National Institute of Environmental Health Sciences, National Institute of Occupational Safety and Health, and the Environmental Protection Agency with the funds made available to the Interagency Energy/Environment Program. The objective of this activity is the development of energy-related health data which will permit reliable estimates of risk to human health associated with increased development and utilization of domestic energy resources.

*Budget request*

The Agency requested $2,389,000 for the fiscal year 1983 Energy Health Effects Program, an increase of $1,023,000 from fiscal year 1982 spending of $1,366,000. The fiscal year 1983 request is $3,418,000 (59 percent) below the fiscal year 1982 request of $5,807,000 and $14,413,000 (83 percent) below fiscal year 1981 spending of $16,802,000. This trend reflects elimination of long-term health effects research related to pollutants from synfuels and conventional coal combustion.

*Committee action*

The Committee recommends an increase of $4,500,000 for this program bringing the fiscal year 1983 authorization to $6,889,000. The Committee views this restoration as modest but essential. Pollutants associated with energy activities are many and they must be evaluated for their effects on public health and the environment and for possible regulation. The Committee believes that the private sector has neither the resources or incentive to undertake such research. The Committee, therefore, provides this increase for long-term health effects research on energy pollutants to identify the most harmful pollutants and to determine the relationship between human exposure to energy pollutants and their corresponding health effects. (See section 4 discussion in this report for related remarks).

For the fiscal year 1984 program, the Committee recommends an increase of $413,000 (6 percent) over fiscal year 1983 funding, with the same program direction and distribution as in fiscal year 1983.

SEC. 2(a)(9)(C) ENERGY/ECOLOGICAL EFFECTS

*Program description*

The Energy/Ecological Effects program determines the rate and character of pollutant emissions from fossil fuel production and synthetic fuel facilities and determines their transport and transformation in the atmosphere. The following subprograms are included within the ecological effects program:

*Transport, fate and effects of energy related pollutants on organisms and ecosystems.*—Research efforts in this program develop the ecological data on fresh water, marine, estuarine and terrestial ecosystems to obtain reliable estimates of the risk associated with accelerated development and utilization of domestic energy resources. In addition, water transport and fate research will emphasize the biological accumulation of pollutants and the transfer of pollutants and end-products through tropic levels. This work is accomplished by the Department of Energy, Department of the Interior, National Institute of Environmental Health Sciences, National Oceanic and Atmospheric Administration, Tennessee Valley Authority, U.S. Department of Agriculture and Environmental Protection Agency with funds made available to the Federal Interagency Energy/Environment Program. The various participating agencies have an array of technical expertise covering many disciplines.

*Atmospheric transport and transformation of energy related pollutants.*—The transport and processes program addresses the transmission in the air and soil of pollutants emitted from energy operation sources to their destination in man and the environment. Additionally, it covers the physical and chemical changes that the pollutants undergo during their transport. Emphasis in air transport research is on the conversion of sulfur and nitrogen oxides, chiefly from coal burning power plants, to sulfates and nitrates. Formation and transport of photochemical oxidants from various energy sources is also emphasized.

*Budget request*

The fiscal year 1983 budget request for the Energy Ecological Effects Program was $3,984,000, a $9,975,000 (71 percent) reduction from fiscal year 1982 spending of $13,959,000. This decrease reflects significant curtailment of research on the movement and environmental effects of energy pollutants.

*Committee action*

The Committee restored $7,400,000 to this program, bringing the fiscal year 1983 authorization to $11,484,000. This increase is to be distributed by the Administrator for research which will help to:

(1) Characterize emissions, and develop atmospheric transport, transformation and dispersion models for pollutants which may be emitted during energy activities involving fossil fuels,

(2) Determine the ecological effects of management practices and pollutants associated with enhanced oil recovery, oil shale retorting, coal liquefaction and gasification, increased coal combustion, gas and oil drilling and other related activities, and

(3) Identify pollutants entering the environment as a result of fuel extraction activities such as oil shale development, coal mining, oil and natural gas recovery, and uranium mining; assessing their environmental impacts; and, developing methods and technologies to control these pollutants.

The Committee views this research as essential for developing effective control strategies that will mitigate the adverse impact of energy related pollutants. (See section 4 discussion in this report for related remarks.)

For fiscal year 1984, the Committee provides an authorization of $12,173,000, an increase of $689,000 over fiscal year 1983, with the same program distribution and direction as in fiscal year 1983.

SEC. 2(a)(9)(D) ENERGY/MONITORING SYSTEMS

*Program description*

The objective of the Energy/Monitoring Systems program is the adaptation, development and validation of field measurements technologies needed for routine monitoring of energy-related air and water pollutants.

The purpose of this activity is to focus and coordinate the research and development on energy-related measurements and instrumentation which are being performed by the Department of Energy, National Aeronautics and Space Administration, National Bureau of Standards, National Institute of Occupational Safety and Health, National Oceanic and Atmospheric Administration and the Environmental Protection Agency. This program develops monitoring and measurement technology and obtains environmental data needed to support the Agency efforts in: visibility protection; acid rain and fine particulate pollution abatement; assessment of the danger to living coral communities represented by offshore oil and gas drilling; and, the determination of the correlation between fixed station monitoring data and actual human exposure to energy-related pollutants.

*Budget request*

No request was made for this program for fiscal year 1983. The Agency requested $230,000 for the Energy Monitoring program in fiscal year 1982, but the program was eliminated during the course of the 1982 fiscal year. Corresponding fiscal year 1981 funding was $3,139,000.

*Comittee action*

The Committee recommended $3,000,000 for this program in fiscal year 1983. These funds are to be used for developing and validating monitoring methods for energy pollutants; for quality assurance services to State, local, and EPA laboratories; and for studies to assess actual human exposure to energy pollutants, especially those resulting from coal combustion. (See section 4 and 5 discussion in this report for related remarks.)

For the fiscal year 1984 program, $3,180,000 is authorized by the Committee, an increase of $180,000 (6 percent) over fiscal year 1983 with the same program distribution and direction as in fiscal year 1983.

SECTION 2(a)(9)(E) ENERGY/ACID RAIN

*Program description*

The EPA's Acid Rain Research Program is a major element of the entire Federal research effort on acid rain which is mandated by the Acid Precipitation Act of 1980 (Title VII of the Energy Security Act of 1980—Public Law 96-294). In this governmentwide program, research is conducted as to the causes, effects, and formation of acid rain, the monitoring of acid substances, the development of control technology, and the assessment and formulation of policies dealing with acid rain. EPA's program is involved in research in each of these areas.

More specifically, the 1983 program will conduct studies to determine:

The location of aquatic and terrestrial systems which are sensitive to acid precipitation;

Criteria for evaluating nutrient and toxic metal transport in soils and water;

Acid precipitation impacts on lakes, streams, and terrestrial systems;

Impacts of acid rain on agronomic crops;

Acid rain and sulfur dioxide/ozone interaction involving crop and yield effects;

Impacts of acid precipitation on materials;

Changes in tap water quality relevant to acid precipitation effects and health risks associated with water chemistry, including heavy metal contamination;

The cost effectiveness of possible control measures for acid precipitation and control options relevant to coal supply and transportation;

Analysis tools for more accurately assessing the costs and benefits of alternative emission control strategies; and

Research strategies for controlled forest ecosystem studies in areas impacted by acid rain.

*Budget request*

The President's budget request for this program in fiscal year 1983 was $12,029,000, an increase of $3,007,000 (33 percent) over fiscal year 1982 spending of $9,022,000.

*Committee action*

The committee strongly endorses the President's fiscal year 1983 request for this program.

The program is part of a larger research effort on Acid Rain which involves many Federal agencies as well as other outside research groups. The success of this program will be greatly dependent on proper cooperation and integration and on exchange of information. The Committee expects EPA to take the necessary steps to ensure that these features are promoted and practiced so that all may benefit from this research effort.

The 33 percent increase which the Administration has requested for acid rain research in the fiscal year 1983 EPA budget is a graphic illustration of the significance which is attached to this problem.

Acid rain is devastating the aquatic ecosystems of the Northeast; and evidence is beginning to mount that it poses a similar threat to many other areas of the nation. It is very gratifying to see that this Administration is sensitive to the problem and has responded in such a positive way.

Since the acid rain threat is one of such immediate importance, it is my hope that the research funded in this authorization will be targeted with great specificity toward those phenomena which bear directly on the development of a national control strategy. Cause and effect relationships need to be delineated with greater quantitative precision; emission sources of greatest importance need to be identified unequivocally and control strategies having the greatest cost effectiveness must be developed. This budget provides the necessary financial support for these tasks.

For fiscal year 1984, the Committee recommends $12,751,000 for acid rain research activities of the EPA, an increase of $722,000 (6 percent) over fiscal year 1983. Fiscal year 1984 program distribution and direction are the same as in fiscal year 1983.

### SEC. 2(a)(10) SUPERFUND

*General program description*

Superfund research and development activities are designed to support the Office of Emergency and Remedial Response, Regional Offices, States and industry by resolving those problems which inhibit the effective and efficient implementation of removal and remedial actions. For instance, many existing technologies, such as those used in the construction industry, wastewater treatment, and spill cleanup, may be applicable to uncontrolled waste sites. However, before these technologies can be applied, they must first be tested, their cost and effectiveness determined, and limitations understood. Similarly, field response personnel must be in a position to rapidly identify and accurately measure the hazardous wastes they are confronted with, as well as be in a position to rapidly assess the risks involved to the surrounding population and ecosystems.

Because of these and other potential operational problems, Superfund research and development activities are systematically designed to meet the short-term objectives of:

Providing the necessary tools and methods for sampling analyses, laboratory analyses, quality assurance and remote monitoring to discover and characterize hazardous wastes from removal and remedial actions;

Providing the necessary tools to field response personnel to determine the potential ecological effects of hazardous substance spills and releases from uncontrolled waste sites;

Providing evaluations of the hazard potential from substances released from spills and uncontrolled waste sites; and

Providing engineering guidance to Federal, State and local officials in the immediate response to spills of hazardous substances; field evaluations of equipment and technologies for on-site treatment and destruction of hazardous wastes, leachates and contaminated groundwater; evaluating and assessing the most cost-effec-

tive technologies for performing remedial actions at uncontrolled sites.

Because Superfund is also legislatively designated a 5-year program, emphasis is not being placed on research per se, but on taking "off-the-shelf" technology and other information and adapting it to uncontrolled hazardous waste site situations.

*Budget request*

The Agency requested a total of $6,336,000 for 1983, a decrease of $7,541,100 from 1982. This decrease represents the completion of several engineering and environmental processes projects required to support initial Superfund implementation efforts.

*Committee action*

The Committee recommends a fiscal year 1983 authorization of $10,736,000, an increase of $4,400,000 over the President's request of $6,336,000. This increase is to be distributed as follows:

*Monitoring.*—$2,000,000 is for development and validation of monitoring methods for hazardous waste dump sites and for quality assurance services to State, local, and EPA laboratories. There are literally thousands of hazardous waste dump sites throughout the country and from these, 400 of the worst sites are to be selected for cleanup using Superfund monies. Proper monitoring is crucial for gathering data necessary for comparative assessments of dump sites and, subsequently, for selection of the most hazardous that should be cleaned up. Also, monitoring is important for evaluating the effectiveness of clean-up activities. One of the critical questions the Agency must be able to answer with respect to cleanup operations is how clean is clean. The funds provided here are intended to be used for monitoring research that will enhance the Agency's ability to make these crucial decisions.

*Control technology.*—$2,400,000 is for evaluation of hazardous waste cleanup technologies and, where appropriate, for the development and demonstration of such technologies. No two hazardous dump sites are the same with regard to the materials contained in the site and the physical characteristics of the site. The Agency's efforts to date in hazardous waste cleanup technology have focussed on evaluating off-the-shelf technology and cleanup methods. Such existing technologies and methods, however, may not be the most effective and efficient. In order to ensure the most cost-effective expenditure of Superfund monies, additional funding is provided for further evaluation of cleanup technologies and methods and, if appropriate and necessary, for the development and demonstration of new technologies and methods which may be more cost-effective than those that already exist.

For fiscal year 1984, the Committee recommends $7,736,000 for this program, a decrease of $3,000,000 from fiscal year 1983. This reduction is made because of the capital intensive nature of the Superfund program.

SECTION 2(b) PROGRAM MANAGEMENT AND SUPPORT

*General description*

This activity provides for centralized program direction, management, and other services for the Agency's research and development

activities. It also includes the pro rata share of agencywide support costs which are allocated to the Research and Development appropriation as well as support costs which are incurred at the Office of Research and Development's laboratories and charged directly to this appropriation.

The program management activities associated with the Agency's research and development program include the overall direction and centralized management of the Office of Research and Development. It covers the salaries and other expenses of the Assistant Administrator for Research and Development and his principal deputies, their immediate staffs, and specialized staff groups which assist them.

Program support covers the overhead services needed to support the research and development effort. Two types of support costs are included. The first consists of the share of the cost of agencywide support services which are prorated to the Research and Development appropriation. These costs include common services provided to programs located in Washington, D.C.; Research Triangle Park, North Carolina; and Cincinnati, Ohio; as well as certain agencywide charges such as facilities lease costs, communications, and centralized ADP services. The second type of cost includes support services which are directly incurred in connection with the operation of the Office of Research and Development's laboratories. These direct costs consist mainly of laboratory and office services, utilities, building maintenance and similar "housekeeping" costs at research and development installations other than those located at Research Triangle Park and Cincinnati.

*Budget request*

The fiscal year 1983 request for activities described in this section was $8,712,000, an increase of $840,000 from fiscal year 1982 spending of $7,883,000.

*Committee action*

The Committee recommends an increase of $2,500,000 over the President's request for Program Management and Support, making the total fiscal 1983 authorization equal to $11,212,000.

Of this increase, $1,000,000 is to be used solely for travel expenses of project officers at EPA laboratories to conduct site visits of contractors and to attend professional development functions. In a recent report by the U.S. General Accounting Office entitled "Promising Changes Improve EPA's Extramural Research; More Changes Needed," it was reported that ". . . limitations on travel funds in some cases prevent project officers from making timely visits to contractors' and grantees' sites to determine whether the research is being conducted to best meet EPA's needs (and that this limitation) could reduce the quality of EPA (sponsored) research . . ." This situation certainly leads to waste. The $1,000,000 increase provided by the Committee is intended to allow proper contract control as well as to enhance the professional skills of scientists who are responsible for such quality control.

To ensure that EPA research programs are supported with the necessary tools to perform good research, $500,000 of the fiscal year 1983 increase is to be used for upgrading laboratory equipment used at EPA laboratories.

Finally, the remaining $1,000,000 of the fiscal year 1983 increase is to be used for a study on the management and organization of Federal environmental research programs which is called for under section 7 of this bill. (See discussion on section 7, beginning on page 44, for details on this study.)

SECTION 2(C)

Section 2(c) authorizes the Administrator of the Environmental Protection Agency to provide payment for peer review of grant and cooperative agreement applications and contract proposals between the Agency and individuals, universities, and other research institutions. This section is intended to apply not only to fiscal year 1983 but to subsequent years as well.

SECTION 2(d)

Section 2(d) provides the Administrator with the authority to transfer funds authorized under this Act only between program categories listed in sections 2 (a) and (b). However, such transfers, when in excess of 5 percent of the funds authorized for a particular research categories, are prohibited without first notifying and seeking approval from appropriate committees of the House and Senate. The Committee agreed that it would be appropriate to give the Agency flexibility in making small changes (less than 5 percent) without seeking approval from Congress but that oversight by the Committees would be greatly enhanced if the Agency were required to notify the Congress and obtain approval before shifting larger sums between program categories.

In authorization bills for prior years, such transfers were limited to 10 percent of program funds before congressional notification was required. Because the Agency has failed to comply with this requirement in the past and because of the two year nature of this authorization, the Committee has chosen to tighten its oversight of the Agency by reducing reprogramming authority from 10 percent to 5 percent for the programs authorized herein.

SECTION 2(e)

This section prohibits the use of any funds appropriated under this Act for any payment for a reduction-in-force, in any fiscal year, in the Office of Research and Development or in any other Agency program office. Furthermore, no such reduction shall be finalized, unless at least thirty days prior to issuing any general notice of such reduction the Administrator informs the appropriate legislative and appropriations committees of the House and Senate in writing of the reasons for such reduction, the impact of such reduction on carrying out the provisions of this Act, the details of such reduction, and other pertinent information.

The Committee took this action to ensure that adequate and qualified manpower exists in the Agency to carry out the program authorized and provisions contained in this Act. The Committee realizes that personnel shifts may be required in response to budget constraints facing the Agency. The Administrator, however, may not make such

shifts with the intent of promoting voluntary separations from the Agency. Moreover, the Administrator shall take such actions to ensure that personnel are assigned to positions and perform tasks for which they are qualified to perform through professional training and experience.

SECTION 3. LONG-TERM RESEARCH

The Committee places a high priority on long-term research, believing that such research will not only build intellectual capital sorely needed by the Agency and the Nation, but will also enhance the overall quality of the Agency's research program and, subsequently, the credibility and effectiveness of EPA. This section, therefore, directs the Administrator to obligate and expend at least 20 percent of the funds appropriated to the Administrator for fiscal year 1983 and 1984 under authority provided by section 2(a) of this Act for long-term environmental research and development. Thus, the total authorization for such activities, as specified in this section, is $57,112,000 for fiscal year 1983 and $59,812,000 for fiscal year 1984, a 6 percent increase over fiscal year 1983. This authorization is for inhouse peer-reviewed research, extramural grants for peer-reviewed research, cooperative agreements with or block grants to universities or similar institutions, and the Exploratory Core Research Program, in amounts specified in this section. The total appropriation provided for the Interdisciplinary Program pursuant to the authorization set forth in section 2(a)(7) of this Act shall be used for these programs. The remainder of the funds to be spent on these programs shall be taken from the funds appropriated for each other category of research authorized in section 2(a) in proportions which assure that each such category contributes the same percentage of the total amount appropriated for that category.

The Committee intends that the research funded through the programs authorized under this section be of the highest scientific quality and relevant to the Agency's mission in all categories of EPA's research program, whether directly or indirectly, and be performed both on an inhouse and extramural basis. The mechanism employed by the Agency in making awards for such research is to include a peer review process that is open. Moreover, the Administrator is directed to organize and manage these programs for maximum benefit to EPA and to take such actions to ensure that the results of research funded through these programs are widely disseminated to those who would benefit therefrom. These requirements are so specified in this section.

Finally, this section requires the Administrator to prepare and submit to Congress, at the time the President's budget request is likewise submitted, a report on the performance of the programs authorized under this section. This requirement is imposed by the Committee in order to help the Committee in evaluating program performance and to ensure that the Agency complies with the provisions set forth in this section.

(See discussion in this report related to the Interdisciplinary Research Program, section 2(a)(7), for related remarks.)

SECTION 4. ENVIRONMENTAL MONITORING

This section provides that of the funds authorized under section 2 of this Act, $46,253,000 for fiscal year 1983 and $49,030,000 for fiscal year 1984, a 6 percent increase over fiscal year 1983, may be used for environmental monitoring research. (Fiscal year 1983 funding for this program represents an increase of $8,924,000 over fiscal year 1982 spending of $37,329,000.) These activities are to be directed at fulfilling the requirements for environmental monitoring under the various statutes administered by the Agency and in developing a continuing national environmental monitoring program on pollutants in all media, whether in the air, water, or land.

The Committee is dismayed over the fact that environmental data is not currently available to indicate, with a relatively high degree of assurance, the state of environmental quality and the impact on such quality by the Federal environmental statutes and the programs set up to implement those statutes. Improving this situation will enhance the soundness of environmental policy decisions and the successful implementation of the environment statutes. This section is intended to make such improvements.

The Committee realizes that developing a national environmental monitoring program which is both comprehensive and effective will be a massive and difficult undertaking. Nevertheless, the Committee directs that such a program be developed. In so doing, the Agency shall work closely with other agencies involved in environmental monitoring and shall proceed with the development of this program by following a build-up approach. That is, the Agency shall first establish a comprehensive national monitoring program for air quality and then apply what is learned in this effort to expand the monitoring program into other media. To ensure that development of this program proceeds in an organized and effective manner, a plan for its design and implementation is required by this section.

In the course of the Agency's activities to develop a national monitoring program, the Agency shall take actions to ensure the integrity and verifiable accuracy of the data base developed by this program. This requirement must be maintained, otherwise the national monitoring program called for in this section will be of little use.

Finally, this section prohibits the use of funds appropriated under this Act for special, short-term monitoring efforts that will impede progress toward developing the national monitoring program called for in this section.

SECTION 5. ENERGY RESEARCH

This section directs the Administrator of the Environmental Protection Agency to utilize the funds appropriated to the Administrator under authority granted in section 2(a)(9) of this Act on a continuing environmental research program associated with energy development activities. This program shall contain five principal subprograms dealing with the development and demonstration of energy control technologies, research on the health effects of energy related pollutants, ecological effects research of energy pollutants, and acid rain. These

programs are to focus on identifying harmful pollutants and on developing appropriate and effective control measures for those pollutants identified as harmful and in need of control. In so doing, these programs are to examine the entire energy development cycle, from fuel extraction through combustion byproducts, for those energy resources that are undergoing major development, or are projected to do so, such as coal, oil, natural gas, and other fossil fuels. In addition, these programs shall give attention to environmental problems indirectly stemming from energy development, such as indoor air pollution. (See section 8.)

In the Nation's drive to become less dependent on foreign sources of energy, domestic energy development activities have escalated and this trend is anticipated to continue in the future. While the Committee favors such development, these activities must proceed in an environmentally acceptable manner in order to safeguard public health and environmental quality. This responsibility should not be transferred to the private sector where incentives to be responsive to environmental concerns associated with energy development appear lacking. The Committee maintains that the Nation can best be served by preserving a strong and diverse energy research program in the Environmental Protection Agency. The Committee, by endorsing this section, directs the Agency to establish and maintain such a program thereby allowing the Agency to meet its statutorily mandated obligations.

### SECTION 6. SCIENCE ADVISORY BOARD

Section 6 amends the existing statutory framework for the Science Advisory Board. The EPA Science Advisory Board was initially established by the Administrator in January 1974 under the provisions of Federal Advisory Committee Act (5 U.S.C. App. 9(c)). The Board was subsequently reconstituted when the Committee created the statutorily mandated Science Advisory Board, as required under the Federal Advisory Committee Act, in the Environmental Research, Development and Demonstration Authorization Act of 1978 (Public Law 95–155).

The purpose of this section is to assure that original congressional intent that the SAB be balanced, independent and representative of diverse views is maintained. As conceived, the Science Advisory Board is to provide the Administrator, and the Congress, with expert, independent scientific review and appraisal of the Agency's scientific goals, needs and major programs. In addition, the SAB is intended to link the top EPA management closely with the scientific community, to make recommendations on research and development needs and to undertake special tasks and studies.

A major concern of the Committee in reconstituting the Science Advisory Board was that "the independence of the Board be assured . . ." (H.R. Rep. No. 157, 95th Cong., 1st Sess., 1977) and was "not intended as a forum to be used by outside interests . . ." (H.R. Rep. No. 722, 95th Cong., 1st Sess., 1977). In its structure the Committee intended that the Science Advisory Board operate in conformity with the requirements of the Federal Advisory Committee

Act, which provides, in pertinent parts that ". . . membership of the advisory committee be fairly balanced in terms of point of view represented and the functions to be performed . . ." Additionally, that legislation requires that ". . . the advice and recommendation of the advisory committee . . . not be inappropriately influenced by the appointing authority or by any special interest but . . . be the result of the advisory committee's independent judgment."

The Committee is concerned that its intentions concerning independence and balance are not being followed in the ongoing reorganization of the Science Advisory Board. The Committee wants to make clear that this action would be taken even in the absence of the current concern that the Agency may be ignoring the letter and spirit of the statutory basis for the Board. This provision merely perfects the language in Public Law 95–155 relative to Science Advisory Board to ensure that a structure and mode of operation exists that reflects the Committee's purpose and intent in creating the Science Advisory Board.

Section 6(a) of this bill amends section 8(b) of Public Law 95–155 in a number of significant respects.

Section (b) is amended to require that the Board be appointed from a list of nominees recommended by a nominating committee composed of representatives from the National Institute of Occupational Safety and Health, National Institute of Environmental Health Sciences, National Cancer Institute, National Science Foundation, and the National Academy of Sciences. The nominating committee will be established, chaired, and managed by the National Institute of Environmental Health Sciences. The Committee has made this change in existing law to ensure that the nominees for the Science Advisory Board are highly qualified individuals and are well-known within the scientific community. Moreover, to further broaden the pool of potential qualified candidates, the nominating committee shall solicit additional names from the general public through notice in the Federal Register.

The Committee further amended section (b) to require the Administrator to select members of the Board in such a manner as to ensure that the Science Advisory Board is fairly balanced in terms of points of view represented and functions to be performed. The language employed by the Committee is similar to that recommended by the Senate Committee on Government Operations Study on Federal Regulations in order to emphasize that multi-member organization's like the Science Advisory Board should be representative of a cross-spectrum in terms of ideology and background. To further ensure balance, the Committee directs that the Board membership contain representatives from the States, industry, labor, academia, consensus and the general public.

The Committee is also concerned that wholesale departures of Science Advisory Board members will severely undermine the body of long-range expertise necessary for the Board to function properly. Accordingly, the amendment provides that no more than one-third of the total membership of the Board and its committees will expire during any one fiscal year. Moreover, the members of the Board will not serve at the pleasure of the Administrator, but will serve out the full

term unless involuntarily unable to discharge their duties or have engaged in activities that constitute a conflict of interest in violations of regulations promulgated in accordance with this section.

If a vacancy occurs, the amendment provides that the Administrator has 90 days in which to appoint a new member to the Board from those nominated to the Administrator by the nominating committee established under authority provided by this section. If no appointment has been made at the expiration of that period, the nominating committee shall, within sixty days, meet and appoint a Board member from the list of nominees supplied to the Administrator. The Committee included this provision in order to ensure that the Science Advisory Board will maintain its full complement of members and continue to reflect that balance of interests deemed essential to the Board's operations.

Finally, the Committee has required that within 120 days of enactment, the Administrator shall promulgate conflict of interest regulations with respect to members of the Board. The Committee wishes to emphasize the importance of this provision. The Science Advisory Board, as envisioned by this Committee and employed by the Environmental Protection Agency, have far-reaching and important responsibilities that impact on the Agency's policymaking and regulatory activities. It is therefore crucial that Board members not have a present or future private economic or other interest that could potentially influence or interfere with the objective exercise of members' responsibility. The actions and recommendations of the Board must, in the Committee's view, be free of suspicion that the member acted out of self-interest.

### SECTION 7. STUDY ON MANAGEMENT AND ORGANIZATION OF ENVIRONMENTAL RESEARCH

This section authorizes a special, two year study on the management and organization of Federal environmental research programs. To fund this study, $1,000,000 of the funds appropriated for FY 1983 and FY 1984 under authority provided by section 2(b) of this Act is made available for such purpose. The study is to address specifically the institutional structure and arrangements of the Federal Government established for the conduct of environmental research, including the coordination and application of such efforts, with the objective of improving the appropriateness and support of Federal environmental research programs in assisting the Agency in fulfilling its mission and in establishing EPA research priorities. The study shall develop recommendation for improving the quality, cost-effectiveness, appropriateness, and utilization of environmental research sponsored by the Federal Government, whether by EPA or other agencies, and, subsequently, the scientific and technical justication for standards and regulations promulgated under authority provided in the environental statutes administered by the Environmental Protection Agency.

The Committee intends that the study provided for in this section be thorough, and include the gathering of data on existing Federal programs. The Committee has specified that the study be done by qualified non-Federal contractor or contractors to avoid many problems

arising from bureaucratic competition and to obtain a fresh perspective. On the other hand, the Committee intends that the study results be utilized, and thus the bill provided that the contract for the study, including such steps as preparation of a request-for-proposals (RFP), be prepared in consultation with all agencies likely to be affected and especially with the Office of Management and Budget.

The contract is to be administered by EPA as to assuring that Federal procurement regulations are met providing funding, etc. However, in order to avoid even an appearance of conflict of interest, EPA will not be responsible for monitoring the substantive progress of the contractor--the Committee intends that that role be reserved for the National Academy of Sciences. Of course the Committee is aware that the goal of much Federally sponsored environmental research is support both of EPA's specific regulatory mandates and also of EPA's general responsibility to protect the public health and welfare. Thus, the Agency is expected to have a significant role in supplying guidelines or criteria by which "appropriateness" and "support" will be judged.

The National Academy of Sciences is expected to play an active and aggressive role. The Committee notes that the Academy has performed a series of studies dealing with research programs in the EPA and thus is particularly up to date on environmental research needs.

The Committee did not want to over-specify the mechanism through which the Academy should operate in this study and thus approved rather general language in the bill. Nevertheless the Committee intends that the Academy take an active role in all parts of the study process from preparation of the RFP to evaluation of the final report. The Academy should comment as it sees fit and in a timely fashion to the Administrator, the President and the Congress. Thus, the Committee intends that the Academy interpret its "oversight and review role" broadly and aggressively, and that such a role be provided for in the study design. Indeed, the Administrator should not let a contract for the study until the Academy is essentially satisfied with the study design including the questions to be asked.

Finally, the Committee does not want the report of the study to be subject to a Federal agency clearance process. It is felt that the Agencies involved should make their input at the beginning of the study and then be willing to deal with the results publicly rather than in a closed "clearance" process. Of course it is assumed that all involved agencies will cooperate with the contractor.

### SECTION 8. INDOOR AIR QUALITY

The Committee intends that the Environmental Protection Agency incorporate into the research program established by this section all efforts—federal, state, local, and private—that involve or promote the conduct of research directed at enhancing our understanding of the indoor air environment.

In order to assist the Administrator to carry out the requirements of this section, the Committee directs that there be established—

(1) A federal Committee on Indoor Air Quality, to be chaired by a representative from the Environmental Protection Agency,

and co-chaired by a representative from the Consumer Product Safety Commission and a representative from the Department of Energy, and to include as members representatives from the Department of Housing and Urban Development, Defense, Commerce, Health and Human Services, and Labor, and such other federal agencies as may be appropriate; and,

(2) An advisory group, supported by the Administrator, which shall be comprised of representatives of industry, the scientific community, public interest organizations, and state and local officials having responsibilities related to the purposes of this section.

It is the sense of committee that the Administrator should give particular emphasis to public information outreach activities to ensure that the results of the research program established by this section are widely disseminated. Such public information activities should include the establishment of a tollfree hot-line information service at the earliest possible opportunity.

## V. Committee Views

### MANAGEMENT AND RESOURCES OF THE OFFICE OF RESEARCH AND DEVELOPMENT

The Committee has for several years been concerned for the management of the Office of Research and Development and these concerns have intensified in recent months. In the year the present Administrator has been in office, she has yet to appoint a permanent Assistant Administrator of ORD. Indeed, the Administrator has refused to provide the Committee with any indication of when this appointment will be made. If ORD is to remain a viable and effective component of EPA, it must have a capable, permanent Assistant Administrator to oversee its management and represent it in internal budget and resource allocation presentations.

It is with some reluctance that the Committee notes the Administrator's disinterest in appointing an Assistant Administrator correlates with her apparent view of EPA's research mission. No single area of EPA actively has suffered such severe reductions in funding and personnel ceilings. In approximately a one year period, the resource base for R&D has been decreased four times. In fiscal year 1981 the research and development support was $342.6 million and 1,666 positions. This was reduced to the current fiscal year 1982 level of about $267.9 million and 1,554 positions, a loss of 23 percent and 7 percent respectively. The fiscal year 1983 request, as noted earlier, is $215.9 million and 1,302 positions, a reduction of 18 percent and 16 percent respectively. These dramatic reductions threaten the very foundation of environmental research sorely needed by the Agency.

These decreases are further compounded by the Administrator's determination on February 5, 1982 that there would be no reduction in force through fiscal year 1983. Although on the surface this appears to preserve much of the existing organization, in fact, the Agency is engaged in a bewildering array of transfers and "bumping" activities to relocate employees in vacant slots in programs that continue to be funded. The Committee has been advised this has resulted in individ-

uals assigned to tasks for which they have no background or interest. This type of action is directly contrary to sound management practice. In such an atmosphere it is difficult, if not impossible, to maintain high quality scientific research. The oft-promised reorganization of the Office of Research and Development will be of little consequence if the staff is usable to perform the necessary research.

The Committee hopes that these reports are not valid. To dispell this impression, however, the Committee requests that the Agency clarify and articulate its position on matters raised here. The Committee will continue to exercise oversight with respect to these matters.

## VI. Cost and Budget Data

The bill will authorize appropriations in the amount of $296,770,000 for fiscal year 1983 and $310,887,000 for fiscal year 1984.

In accordance with the requirements of Sec. 252(b) of the Legislative Reorganization Act of 1970, the Committee notes that this bill is an authorization bill for two years. If the program authorized under this bill remains substantially unchanged during the next five years and the same level of effort is expended, there will be no change in costs other than those occasioned by inflation or Federal salary increases.

## VII. Oversight Findings and Recommendations

No oversight findings and recommendations pursuant to clause 2(1)(3)(A), rule XI, by the Committee on Science and Technology under the authority of rule X, clause 2(b)(1) and clause (3)(f), of the Rules of the House of Representatives have been prepared since the convening of the 97th Congress.

## VIII. Congressional Budget Act Information

This bill provides for new authorization rather than new budget authority and consequently the provisions of section 308(a) of the Congressional Budget Act of 1974 are not applicable. No authorization for State or local financial assistance is included in the bill.

## IX. Congressional Budget Office—Cost Estimate

1. Bill number: H.R. 6323.

2. Bill title: Environmental Research, Development, and Demonstration Act of 1983.

3. Bill status: As order reported by the House Committee on Science and Technology, May 18, 1982.

4. Bill purpose: The bill authorizes the appropriation of $297 million for fiscal year 1983 and $311 million for fiscal year 1984 for the research and development activities of the Environmental Protection Agency (EPA).

5. Cost estimate:

| | Millions |
|---|---|
| Authorization level: | |
| Fiscal year: | |
| 1983 | $296.8 |
| 1984 | 310.9 |
| 1985 | ------ |
| 1986 | ------ |
| 1987 | ------ |
| Estimated outlays: | |
| Fiscal year: | |
| 1983 | 89.0 |
| 1984 | 229.5 |
| 1985 | 190.6 |
| 1986 | 73.6 |
| 1987 | 25.0 |

The costs of this bill fall within budget functions 270 and 300.

6. Basis of estimate: The authorization levels are those stated in the bill. Outlays were estimated based on historical spending patterns for these and similar programs.

7. Estimate comparison: None.

8. Previous CBO estimate: On May 14, 1982, the Congressional Budget Office prepared a cost estimate for the Environmental Research, Development, and Demonstration Act of 1983, as ordered reported by the Senate Committee on Environment and Public Works on May 10, 1982. The Senate version of the bill authorized the appropriation of $264 million for EPA research and development in fiscal year 1983, but did not authorize fiscal year 1984 appropriations.

9. Estimate prepared by Anne E. Hoffman.

10. Estimate approved by:

C. G. Nuckols
(For James L. Blum,
*Assistant Director for Budget Analysis*).

## X. Oversight Findings and Recommendations, Committee on Government Operations

No findings or recommendations on oversight activity pursuant to clause 2(b)(2), rule X, and clause 2(l)(3)(D), rule XI, of the Rules of the House of Representatives have been submitted by the Committee on Government Operations for inclusion in this report.

## XI. Effect of Legislation on Inflation

In accordance with rule XI, clause 2(l)(4) of the Rules of the House of Representatives, this legislation is assessed to have no adverse inflationary effect on prices and costs in the operation of the national economy.

Expenditures by EPA's Office of Research and Development are made in support of basic and applied research conducted in EPA laboratories, by colleges, universities, and private industry under grants and contracts, and by other government agencies through formal interagency agreements.

The research and development program supported by this bill produces the valid scientific information and the most cost-effective technical tools and control systems for our national policy for environmental protection. In the long run, savings will be achieved by providing the most economically feasible techniques in support of such large scale endeavors as the nation's multi-billion-dollar wastewater construction grant program.

The Committee recognizes that there is a current controversy concerning whether or not environmental health and safety regulations are inflationary. As mentioned above, there are certain research and development projects in the field of control technology that can help alleviate the economic burdens of regulation, and in that sense some of the programs authorized in this bill may be anti-inflationary. Other areas of research, such as health effects research, should be considered economically neutral because they provide information needed to make regulatory decisions. If anything, the current controversy and debate should increase the emphasis on the need for high quality health effects research, for accurate environmental monitoring, and for credible assessment of human health risks. The Committee intends that regulatory decisions, either to regulate or not to regulate, be based on the highest quality information and believes that such information will lead to optimum decisions.

## XII. Changes in Existing Law Made by the Bill, as Reported

In compliance with clause 3 of Rule XIII of the Rules of the House of Representatives, changes in existing law made by the bill, as reported, are shown as follows (existing law proposed to be omitted is enclosed in black brackets, new matter is printed in italic, existing law in which no change is proposed is shown in roman) :

### Section 8 of the Environmental Research, Development, and Demonstration Authorization Act of 1978

Sec. 8. (a) * * *

* * * * * * *

[(b) Such Board shall be composed of at least nine members, one of whom shall be designated Chairman, and shall meet at such times and places as may be designated by the Chairman of the Board in consultation with the Administrator. Each member of the Board shall be qualified by education, training, and experience to evaluate scientific and technical information on matters referred to the Board under this section.]

*(b)(1) The Board shall be composed of at least nine members appointed by the Administrator from a list of nominees recommended to the Administrator by a nominating committee whose representation shall include the National Institute of Occupational Safety and Health, National Institute of Environmental Health Sciences, National Cancer Institute, National Science Foundation, and National Academy of Sciences. The nominating committee shall be established, chaired, and managed, in consultation with the Administrator, by the National Institute of Environmental Health Sciences. The nominating*

*committee shall solicit from the general public, through notice in the Federal Register, candidates for nomination to the Board. The Administrator may require such information from the nominees to the Board as the Administrator deems necessary, and the Administrator shall publish in the Federal Register the name, address, and professional affiliation of each nominee.*

*(2) Each member of the Board and nominee to the Board shall be qualified by education, training, and experience to evaluate scientific and technical information on matters referred to the Board under this section. The Administrator shall select persons nominated for the Board to ensure that Board membership is fairly balanced in terms of the points of view represented and the functions to be performed by the Board. In order to provide this balance, the Board membership must represent the States, industry, labor, academia, consumers, and the general public; and the nominating committee established under paragraph (1) shall make certain that this requirement is met when selecting nominees to the Board which in turn are recommended to the Administrator for selection as members of the Board.*

*(3) The terms of the members of the Board shall be three years, and shall be staggered so that the terms of no more than one-third of the total membership of the Board and its committees shall expire within a single fiscal year. Each member of the Board shall serve the full length of that member's term unless that member is unable, for involuntary reasons, to discharge his or her duties as set forth in this section or has violated the regulations promulgated pursuant to paragraph (5).*

*(4) If a vacancy on the Board is not filled by the Administrator within ninety days of the occurrence of that vacancy, the nominating committee established under paragraph (1) shall meet and appoint, within sixty days, a member of the Board to fill that vacancy from the list of nominees recommended to the Administrator under paragraph (1) in accordance with the selection criteria set forth in paragraph (2).*

*(5) In order to ensure the objectivity of the Board, the Administrator shall promulgate, within one hundred and twenty days after the date of the enactment of this paragraph, regulations regarding conflicts of interest with respect to the members of the Board.*

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(e) (1) The Administrator, at the time any proposed citeria document, standard, limitation, or regulation under the Clean Air Act, the Federal Water Pollution Control Act, the Resource, Conservation and Recovery Act of 1976, the Noise Control Act, the Toxic Substances Control Act, or the Safe Drinking Water Act, or under any other authority of the Administrator, is provided to any other Federal agency for formal review and comment, shall make available to the Board such proposed criteria document, standard, limitation, or regulation, together with relevant scientific and technical information in the possession of the Environmental Protection Agency on which the proposed action is based.

(2) The Board may make available to the Administrator, within the time specified by the Administrator, its advice and comments on

the adequacy of the scientific and technical basis of the proposed criteria document, standard, limitation, or regulation, together with any pertinent information in the Board's possession. *The Board's advice and comments and the response of the Administrator shall be included in the record with respect to any proposed rule and published in the Federal Register in accordance with the requirements of the environmental statutes and the authority of the Administrator.*

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## XIII. Committee Recommendations

A quorum being present, the Committee favorably reported the bill, H.R. 6323, and recommends its enactment.

## MINORITY VIEWS

The Minority members of the Science and Technology Committee find it necessary to oppose the Committee's authorization bill for the Environmental Protection Agency due to the 5-percent increased level of funding, the request for a two year authorization, and particularly the highly restrictive language included in sections 2(d)(3) and the entire section 6 of the bill amending the Science Advisory Board.

The Environmental Protection Agency has enjoyed bipartisan support in the Congress since its inception under a Republican administration. That same bipartisan concern and support for environmental protection exists in this Congress today. However, the Democrats' approach to the current fiscal reality varies quite drastically from ours. In an era of fiscal restraints, it is much easier for opponents of the Administration to arbitrarily establish budget levels at unrealistically higher figures than the Administration requests rather than try to develop budgets within current economic constraints. Under such a scenario, the Majority, by setting higher levels, implies that bigger is better. The Minority, on the other hand, contends that more dollars in the EPA RæD budget does not equate directly to more useful products, to more effective environmental regulations, or even to a safer environment for Americans.

This committee has continually scrutinized the EPA R&D program and has witnessed in the past that increased funding has often not produced higher quality research. To respond, once more, by substantially increasing funding brings forth a question as to the merits of such a business-as-usual attitude.

Despite our desire to remain within the Administration's budget request of $215.9 million, the need to protect programs which this committee has repeatedly expressed concern over led us to offer an alternative EPA budget of $222.9 million.

We take great issue with the increase of $24 million proposed by the Majority in Energy Research. The President's proposal for energy control technology reflects the philosophy that the private sector can be expected to undertake final development and commercialization of control equipment. This major market has been created by the issuance of air quality standards. EPA will continue to evaluate the reliability and effectiveness of control technologies. The proposed addition of $9.0 million by the Majority perpetuates a belief that the government is more qualified than private industry to conduct these developments. The Minority does not support this thesis.

We also disagree with the increases this bill calls for in the energy monitoring research program. The Agency's budget consolidates such research into the non-energy programs at an estimated budget of $31 million. Finally, EPA's proposed reduction in energy ecological effects research is based on the successful completion of significant research in

mining and reclamation and offshore oil and gas drilling. Therefore, we find the increases proposed by the Majority to be unnecessary and inappropriate.

The Minority wishes to express strenuous objection to the language contained in this legislation which represents a totally unwarranted attempt by the Majority to improperly limit the authority of the Administrator to transfer and to efficiently manage the agency. This attempt at micromanagement by the Committee Majority could remove essential management authority and flexibility from the Administrator and will inevitably result in less effective management, reduce efficiency, and substantially increase paperwork. Such heavy handed attempts to impose ridiculous and unnecessary constraints merely because members of the Majority do not approve of the current Administrator's management style must be rejected.

Finally, Section 6 of the bill which amends the enabling statute under which the Science Advisory Board was created, is both unnecessary and redundant to provisions contained in this Committee's authorization bill of 1978 in which specific guidelines were provided for establishment of the SAB.

In conclusion, the Minority continues to support the bipartisan efforts to maintain a sound environmental program and supports the Administration's efforts to restore economic stability to our nation.

The preceeding views are signed only by the Ranking Republican of the Full Committee and Subcommittee because of the time constraints imposed by the committee on filing the legislative report. Rule XI, cl. 2 of the House rules specifies that three legislative days will be provided for this purpose. The Committee imposed deadline was 12 hours after bill passage. In an attempt to meet that deadline, we have decided not to route these views for the signatures of other members who are certain to support this position.

LARRY WINN, Jr.
WILLIAM CARNEY.

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